



# Fuels & Lubricants Laboratory (FLL)



The U.S. Army Combat Capabilities Development Command (CCDC) Ground Vehicle Systems Center's (GVSC) Ground System Performance Fluid (GSPF) team operates and maintains the Fuels and Lubricants Labs (FLL). The FLL has the ability to conduct research, development, testing, analysis, and investigation of ground system performance fluids. Lab experts adhere to standardized testing methodology as published by ASTM International, SAE International, and Federal Test Method 791.

**Mission:** Tackle those unique challenges facing ground system performance fluids to keep the U.S. military in motion anytime, anywhere.

**Vision:** To be DOD's premier choice in technological development and cutting edge research of performance fluids and material interactions in ground systems.



**GSPF serves as the Department of Defense's responsible agent for all ground fuels and lubricants specifications: AR70-12 – Fuels and Lubricants Standardization Policy for Equipment Design, Operation, and Logistic Support**

CCDC GVSC's Fuels and Lubricants Labs comprise 7,075 square feet with an additional 1,600 square feet of space for Petroleum, Oil and Lubricants (POL) storage. FLL's capabilities span from specification and qualification testing, to investigation of field failures or hardware issues, and experimental research in tribology, nanotechnology, corrosion, and fuel efficiency improvement of products. Testing capabilities cover necessary powertrain products for ground vehicles and equipment, including coolants, hydraulic fluids, and other fluids & solvents.



GSPF Chemical Engineer examining particulate contamination in fuel.



GSPF Research Engineer preparing steel panels for solid film lubricant testing.

# Fuels & Lubricants Laboratory (FLL)

## GSPF Products & Capabilities

### Capabilities include:

- Combustion and Volatility
- Physical Properties
- Elemental Properties
- Stability and Cleanliness
- Flow/Rheology
- Tribology
- Elastomer Compatibility
- Corrosion Prevention
- Ancillary Equipment

	Fuel	Engine Oil & Trans Fluid	Gear Oil	Solvent	Hydraulic Fluid	Coolant	Grease	Solid Film Lubricant	Brake Fluid	Preservative Oil	Filters & Debris
Combustion & Volatility	●	●		●	●					●	
Physical Properties	●	●	●	●	●	●	●		●	●	
Elemental Properties	●	●	●	●	●	●	●	●	●	●	●
Stability & Cleanliness	●	●	●		●	●	●		●	●	●
Flow & Rheology	●	●	●		●	●			●	●	
Tribology	●	●	●		●	●	●			●	●
Elastomer Compatibility	●				●	●			●		
Corrosion Prevention	●	●	●		●	●	●			●	
Research	●	●	●	●	●	●	●	●	●	●	●

### ISO 17025 Accreditation

Accredited to perform 45 ASTM test methods on fuel and oil.



### Benefits:

- Independent government analysis, testing and interpretation of results.
- Government and industry interface.
- Prompt testing supports in-house TARDEC projects, especially in conjunction with GSPEL testing.
- Historical background on products.
- Development of custom products and associated specifications and documentation for procurement.

GSPF maintains unique capabilities within the **U.S. Army CCDC GVSC's Force Projection Technology** team, whose mission is to provide equipment lifecycle engineering support for the missions of gap crossing, petroleum and water systems, combat engineering, material handling and fluid quality surveillance.

For questions related to ground system fluids, contact [usarmy.detroit.rdecom.mbx.tardec-pol-help@mail.mil](mailto:usarmy.detroit.rdecom.mbx.tardec-pol-help@mail.mil)

### FOR FURTHER INFORMATION:

**U.S. ARMY COMBAT CAPABILITIES DEVELOPMENT COMMAND — GROUND VEHICLE SYSTEMS CENTER:**

<https://tardec.army.mil/>

### Contact Information:

Jill Bramer  
[jill.m.bramer.civ@mail.mil](mailto:jill.m.bramer.civ@mail.mil)  
 586.282.4224